readily reached and removed with the chisel or gouge through either of the incisions.

I have now to relate the following case, which is not only a proof of the possibility and success of this operation, but is also an illustrative example of the form of disease in which I think that excision may, instead of amputation or removal of an entire os calcis or astragalus, be employed.

Catharine K., age 18, was admitted into my wards, in the Infirmary, on the 20th of March of this year. Her history was, that about two years previous to her admission she severely twisted her right foot. From that time she suffered more or less pain in the region of the joint between the os calcis and astragalus, with swelling of the foot below the ankle. She was treated by rest and the application of warm fomentations, tincture of iodine, and other remedies, but with only very temporary benefit. As her symptoms were becoming steadily worse, she requested to be admitted into the Infirmary.

On admission the symptoms of disease in the calcaneo-astragaloid articulation were well marked. These symptoms were swelling on the lateral and posterior aspects of the foot immediately below the malleoli, tenderness on pressure, and pain when the foot was firmly grasped, and moved laterally and rotated. The ankle-joint was healthy, and the anterior tarsus and portion of the foot were free of disease. The first treatment consisted of complete rest, and the application of soothing means to relieve the pain. Shortly after this a small abscess formed on the external aspect of the joint, and it was opened and the wound dressed with antiseptic precautions. The wound was healed in about a month, and the foot, ankle, and leg were then confined in pasteboard splints and a starch bandage. With this appliance she was sent to the Convalescent Hospital for six weeks, but on her return little change had taken place in the symptoms. The splints were reapplied, and she went home, but returned again on the 20th of July, as the disease was no better, but rather worse. The swelling and pain were now more marked, and in addition there was a feeling of deep fluctuation over the outer aspect of the joint. On account of this aggravation of the disease she was re-admitted, and on the 29th of August I exposed the lateral aspects of the joint in the way I have described, and finding suppuration with caries of its articular surfaces, more particularly of those of its posterior portion, I removed with the chisel the entire articular surfaces of the joint—that is to say, the articular surfaces on the upper aspect of the os calcis, and the corresponding surfaces on the under aspect of the astragalus. The interosseous ligament was softened and in part destroyed. After the diseased surfaces had been removed, a drainage-tube was passed completely through the joint, and its open ends allowed to project at either wound. The operation was performed with antiseptic precautions, and the usual antiseptic dressing was afterwards applied and continued until the 10th of October, when the boracic-acid lotion was substituted for it. The patient's progress after the operation was excellent, and the wounds gradually contracted, and were soundly healed on the 22d of November.

At this date the appearance of the foot was natural, and the movements at the ankle-joint were free and perfect. The patient could bear good weight upon the foot, and it promised to be in time quite strong and useful.

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36. *Neuroma of the Median Nerve; Excision and Suture of Nerve.*—At the meeting of the Surgical Society of Paris, on November 8, M. Notta brought forward this case. A tumour of the size of a hazel-nut existed on the anterior surface of the forearm, presenting all the objective and subjective symptoms of a neuroma of the median nerve. This was excised, and the ends of the nerve (retracted about three centimetres) were brought into contact by a metallic suture. After the operation, anæsthesia was proved to exist in the parts supplied by the median nerve. Formication was soon felt. On the thirteenth day sensibility reappeared in the ring finger; on the sixteenth on the thenar eminence; elsewhere the return was more gradual; eight months after the operation, the patient could feel as well with one hand as with the other At the same time, peripheral ulcerations on the index and middle finger had healed. Microscopic examination showed that the tumour was a fibro-sarcoma

in the substance of the median nerve, with the nerve-fibre separated and stretched over it. M. Verneuil said that in his opinion to employ sutures to obtain reunion of nerves was useless, and founded on a wrong principle. In such cases, sensibility always returned from the periphery towards the centre, and was due to collateral innervation, and not to the reformation of the nerve and the passage of nervous impressions along newly formed nerve-fibres. Sufficient time had not elapsed for this to have taken place in M. Notta's case, where sensibility began to return on the thirteenth day. So, too, in excision of the lower jaw, where the inferior maxillary nerve was destroyed, sensibility began to return the day after the operation, and first in the middle line. He would quote the case of a young lady brought to him with the fingers of one hand extremely flexed upon the palm, the superficial flexor tendons and the median nerve being embedded in a cicatrix resulting from ulceration due to the faulty application of a splint. The fingers were movable and sensitive. In the course of an operation, which was attempted to isolate the flexor tendons, the median nerve was cut across. After the operation, however, sensibility was in no way affected, its preservation being obviously due to the collateral innervation of the parts. [If reference be made to an article on this subject by the translator in the *British Medical Journal*, April 1, 1876, the following explanation by Dr. Richet of "collateral innervation" will be found. The terminal filaments of the radial, median, and ulnar anastomose amongst themselves to form loops, from which come off the filaments which end in the touch-corpuscles. As both loops and filaments are compound, containing filaments from the median, radial, and ulnar, section of one of these trunks is powerless to deprive of sensibility the corpuscles which are the essential organs of touch.]—*London Med. Record*, Dec. 15, 1876.

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37. *Spasmodic Contraction of Muscles treated by Excision of Nerves.*—Mr. W. SPENCER WATSON, at a late meeting of the Royal Medical and Chirurgical Society (*Med. Times and Gaz.*, Jan. 6, 1877), read notes of the case of a young lady, aged nineteen years, who was the subject, when nine months old, of so-called infantile paralysis. The right arm and right leg had ever since been contracted at the wrist and ankle. The deformity of the foot, however, had been remedied by division of the tendo Achillis in infancy, and the patient had been able to walk with a limp ever since. The right arm, forearm, and hand had, besides the permanent contraction of the flexors, been more recently subject to violent spasmodic movements which had produced exhaustive debility and a tendency to hysterical paroxysms. After the failure of general remedies and of tenotomy of the more prominent flexors, Mr. Watson divided and excised a portion of the median nerve at the elbow. This relieved the muscular spasm to some extent, and somewhat reduced the previously heightened temperature of the limb. The deep flexors and adductors, however, continued to be subject to violent spasmodic movements, and the wrist continued permanently flexed. Mr. Watson, therefore, with Sir William Gull's sanction, excised a portion of the ulnar nerve behind the inner condyle of the humerus. The contracted muscles were at once released, and the forcibly adducted thumb and little finger set free. The total effect of all the operations has been decidedly beneficial to the patient, but she still complains of pain in those parts now paralyzed as to sensation and motion. The operations of neurectomy and tenotomy were undertaken in this case on the hypothesis that the original central lesion was become secondarily aggravated by the constant peripheral irritation either associated with or caused by the convulsive muscular movements. The primary mischief was central; the peripheral irritation reacted upon the centre. A vicious circle of cumulative nerve-irritation was thus established. The object of the operations was to break the continuity of that circle.

Mr. T. Nunn had recently seen a lady the subject of continuous spasm in the flexors of the leg. This seemed to follow on a blow on the spine. Here division of the nerve would probably have been useless. In Mr. Spencer Watson's case he did not think so much of the nerve need have been removed, as temporary division might have sufficed, and the nerve would have grown again.

Mr. Hulke said that if temporary destruction of the conductivity of a nerve